

## ABSTRACT OF THE DISCLOSURE

A method of reducing the amount of halogenated materials in a halogen-containing environment. The method comprises introducing an aluminum compound into the halogen-containing environment, reacting the aluminum compound with the halogenated material to form a gaseous reaction product, and removing the gaseous reaction product from the environment. The aluminum compound may be a trialkylaluminum compound, an alane, an alkylaluminum hydride, an alkylaluminum halide, an alkylaluminum sesquihalide, or an aluminum sesquihalide. The aluminum compound may alternatively form a solid aluminum product, which is deposited on a surface associated with the halogen-containing environment or onto a semiconductor disposed therewithin. The halogenated material is incorporated into the solid aluminum product, forming an inert film within which the halogenated material is trapped.

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